VQ Plus
User Guide

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VQ Plus
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Overview

VQ Plus is an add on module to the standard queue features of your PBX. It expands the options of your queue and allows you to:

- Build dynamic queue penalty rules that change as the caller waits longer in a queue.

  ◦ Only try agents with a penalty of 0-1 for the first minute, then only try agents with a penalty of 2-4 for the next minute. Escalate from there.
  ◦ Only try agents with a penalty of 0 for 30 seconds, try agents with a penalty of 0-1 for 30 seconds, try agents with a penalty of 0-2 and so forth.

- Create virtual queues. A virtual queue allows you to change the settings of a queue, such as the announcements, destination of failover, wait time, min and max penalties, CID prefix and others before you route the call to your queue.

  ◦ A good example of this is you would setup a single support queue 4000. All normal support callers go to queue 4000, but you could create a virtual queue 4001 that would allow you to change the CID prefix of the callers that come through to be VIP before they are sent to queue 4000. This allows you to setup 1 queue for all of your agents to log into, but route callers through the virtual queue to change settings before going to queue 4000.

- More control over destinations in the queue from a standard queue. The standard queue only allows you to send all unanswered calls to a single destination regardless on why the call was not answered. With VQ plus you can now optionally set separate destinations for each reasons:

  ◦ Queue Fail Over on FULL Destination
  ◦ Queue Fail Over on JOINEMPTY Destination
  ◦ Queue Fail Over on LEAVEEMPTY Destination
  ◦ Queue Fail Over on JOINUNAVAIL Destination
  ◦ Queue Fail Over on LEAVEUNAVAIL Destination

- Ability to route the agent or caller to any destination on hangup of a queue call. Meaning you could route the inbound caller to a survey system automatically when the agent hangs up the call.

  ◦ **Caller Post Hangup Destination**- Destination to send the caller to upon the agent hanging up the call. This is often used to send a caller to take a post call survey.
  ◦ **Agent Post Hangup Destination**- Destination to send the agent to upon the caller hanging up the call.

Queue Penalty Rules

Queue penalty rules allow you to setup penalty rules that can be mapped to any queue. A penalty rule simple states which agent penalties to try and for how long.

- When creating a queue, you define what the "Initial Min and Max Penalty" range is for each new caller. The queue will only try and call agents that are logged in within that penalty range.

Queue Plus Options

| Initial Min Penalty | 0 | ✔ Enable |
| Initial Max Penalty | 0 | ✔ Enable |

- By creating a queue penalty rule and linking the rule to a queue, you can change the min and max penalty range based on time. To do this, go into the module called "Queue Penalty Rule" and you should see a screen like this.

Queue Penalty Rules

[New Rule Set]

Add Rule Set

Name [   ]

Queue Rules Table

Duration	MAX Penalty Change	MIN Penalty Change
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

- On the right side of the screen will be a list of any queue penalty rules that you have created. You can then click on any of them to edit or view the rules. On the main page you will see a blank form that we can use to create a new rule. We will name our new rule "Default."

Add Rule Set

Name Default

- Next we can define different rules. A rule is composed of 3 items.

- ◦ **Duration**- How long do we wait in seconds before this rule kicks in from the previous rule above this one. If it is the first rule in the list, it is how long to wait from when the caller first entered the queue.
- ◦ **Max Penalty**- What is the maximum agent penalty that we want to try and call for this rule.
- ◦ **Min Penalty**- What is the minimum agent penalty that we want to try and call for this rule.

- Our first rule we will setup is going to wait 60 seconds after the caller has entered the queue before we change the rule. If the call has not been answered by an agent in the queue after waiting 60 seconds, we will leave the minimum agent penalty of 0 but increase the max agent penalty to 3 to include more agents.

Queue Penalty Rules

Add Rule Set

Name ⃝   Default

Queue Rules Table

Duration	MAX Penalty Change	MIN Penalty Change
60	3	0

- The second rule we will create is to wait 120 seconds above the previous rule and increase the max agent penalty to 5.

Queue Rules Table

Duration	MAX Penalty Change	MIN Penalty Change
60	3	0
120	5	0

- From here you can keep creating more rules up to 10 total.

- Lastly, you need to go into a queue and link the queue to this penalty rule.

Queue Plus Options

Initial Min Penalty ❓   `0` ☑ Enable

Initial Max Penalty ❓   `0` ☑ Enable

Queue Penalty Rules ❓   `Default ⇕`

<u>Virtual Queues</u>

- Virtual queues allow you to route a call to a virtual queue, which allows you to change some settings before the call is sent to a real queue. The settings you can change with a virtual queue are:

  - **CID Name Prefix**- CID prefix commonly used to help the agent know what queue the call came in to.
  - **Alert Info**- Alert info to add to SIP header when sent to the agent that is commonly used to create some form of distinctive ring to the agent.
  - **Music on Hold Class**- Music class to play to callers while waiting for an agent who is not in the primary queue.
  - **Join Announcement**- Announcement to play to callers upon joining the queue.
  - **Language**- Language code to set the channel. This is used in conjunction with the language sound files if other languages are installed on the system. This requires setup outside of FreePBX and will default to the installed English sound files if none are present for this language.
  - **Max Wait Time**- Maximum wait time for a caller, after which the call will exit the queue and be sent to the failover destination.
  - **Queue Priority**- Queue priority to use for this virtual queue. A normal queue has 0 priority and larger numbers have higher priority.
  - **Queue Position**- When set queue will attempt to insert this caller into the designated position within the queue.
  - **Agent Announcement**- Announcement to play to agent upon answering a queue call prior to bridging the caller.
  - **Call Confirm Announcement**- Announcement to be played to remote agents when answering a queue call to confirm they want to answer the call. This will override the queue setting as well as any Follow Me announcement they have set.
  - **Initial Min Penalty**- The minimum penalty an agent must have to be included in this virtual queue. This penalty can change dynamically if a queue rule is also applied.
  - **Initial Max Penalty**- The maximum penalty an agent must have to be included in this virtual queue. This penalty can change dynamically if a queue rule is also applied.
  - **Queue Penalty Rule**- Queue penalty rules, part of the generated queuerules.conf, allow the QUEUE_MIN_PENALTY and QUEUE_MAX_PENALTY to change as a caller ages in a queue. Make sure to set the initial min and max penalties above when using rules.

- ◦ **Caller Post Hangup Destination**- Destination to send the caller to upon the agent hanging up the call. This is often used to send a caller to take a post call survey.
- ◦ **Agent Post Hangup Destination**- Destination to send the agent to upon the caller hanging up the call.
- ◦ **Queue Fail Over on Full Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: FULL.
- ◦ **Queue Fail Over on JOINEMPTY Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: JOINEMPTY.
- ◦ **Queue Fail Over on LEAVEEMPTY Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: LEAVEEMPTY.
- ◦ **Queue Fail Over on JOINUNAVAIL Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: JOINUNAVAIL.
- ◦ **Queue Fail Over on LEAVEUNAVAIL Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: LEAVEUNAVAIL.
- ◦ **Queue Default Fail Over Destination**- Alternative destination defined in the hosting queue if the call exits the queue and proceeds to the failover destination.

Virtual Queues

Add Virtual Queue

Name
CID Name Prefix
Alert Info
Music on Hold Class   unchanged
Join Announcement   unchanged
Language
Max Wait Time   Unchanged
Queue Priority   Enable
Queue Position   Enable

Agent Related Settings

Agent Announcement   unchanged
Call Confirm Announcement   unchanged
Initial Min Penalty   Enable
Initial Max Penalty   Enable
Queue Penalty Rules   unchanged

Target Queue Destinations

Caller Post Hangup Destination   unchanged
Agent Post Hangup Destination   unchanged
Queue Fail Over on FULL Destination   unchanged

- In our example, we have a normal support queue called "Support." In this queue, the default agent penalty range for a new caller has a minimum penalty of 0 and a maximum penalty of 0. So when a new caller enters the queue, it will only try agents with a penalty of 0. We have a queue rule in place that after a minute we then try agents with a penalty of 0 through 3 if the caller has not answered the call.

- Since we have some important customers that we want to give VIP treatment to, we have 2 options. We could create another queue that agents have to log into to get calls from the VIP callers or we could create a new "Virtual Queue" for our VIP members that would change the following queue options before sending the caller into our normal support queue.

  ◦ **Caller ID Prepend**- We will change this to VIP so each VIP customer who flows through this virtual queue will be prepended with VIP.

  Add Virtual Queue

Name ❓	VIP Customers
CID Name Prefix ❓	VIP

  ◦ **Initial Max Penalty**- The default support queue is to leave this set at 0. Since we want to try and find agents for this VIP caller quicker, we will set this to 100 so it will include all agents with a penalty of 0 to 100.

  Agent Related Settings

Agent Announcement ❓	unchanged ▾
Call Confirm Announcement ❓	unchanged ▾
Initial Min Penalty ❓	☐ Enable
Initial Max Penalty ❓	100 ☑Enable
Queue Penalty Rules ❓	unchanged ▾

  ◦ We will also set the normal failover destination to go to a special VIP voicemail box that only VIP customers get to leave a voicemail on. A normal support caller who times out of a queue would go to the normal support voicemail box that may not be checked or monitored as often as the VIP voicemail box is.

Target Queue Destinations

Caller Post Hangup Destination ❓	unchanged ⬍
Agent Post Hangup Destination ❓	unchanged ⬍
Queue Fail Over on FULL Destination ❓	Extensions ⬍ <5001> 5001 ⬍

◦ Now we need to tell this virtual queue what queue to send this actual caller to with the changes we defined above.

Module Destination

Destination ❓	Queues ⬍ test <5000> ⬍

◦ Now that we have setup a simple virtual queue, don't forget to press the "Submit" button on the bottom of the page.

Submit

◦ Lastly, you just need to route your VIP customers to this virtual queue. You will see "Virtual Queues" as a destination option now just like normal queues were. In our example, we will route an inbound route right to this virtual queue, which will make the changes above and forward the caller to our support queue.

Set Destination

Virtual Queues ⬍	VIP Customers <1> ⬍

VQ Plus Options in Queues

• The VQ Plus add on expands some of your normal queue options. The additional queue options can be found when you are editing or creating a normal queue on your PBX.

Queue Plus Options

Initial Min Penalty ❓   [⬍] ☐ Enable

Initial Max Penalty ❓   [⬍] ☐ Enable

Queue Penalty Rules ❓   [none ⬍]

Caller Post Hangup Destination ❓   [== choose one == ⬍]

Agent Post Hangup Destination ❓   [== choose one == ⬍]

Queue Fail Over on FULL Destination ❓   [== choose one == ⬍]

Queue Fail Over on JOINEMPTY Destination ❓   [== choose one == ⬍]

Queue Fail Over on LEAVEEMPTY Destination ❓   [== choose one == ⬍]

Queue Fail Over on JOINUNAVAIL Destination ❓   [== choose one == ⬍]

Queue Fail Over on LEAVEUNAVAIL Destination ❓   [== choose one == ⬍]

- **Initial Min Penalty**- The minimum penalty an agent must have to be included in this virtual queue. This penalty can change dynamically if a queue rule is also applied.
- **Initial Max Penalty**- The maximum penalty an agent must have to be included in this virtual queue. This penalty can change dynamically if a queue rule is also applied.
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- **Agent Post Hangup Destination**- Destination to send the agent to upon the caller hanging up the call.
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- **Queue Fail Over on JOINEMPTY Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: JOINEMPTY.
- **Queue Fail Over on LEAVEEMPTY Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: LEAVEEMPTY.
- **Queue Fail Over on JOINUNAVAIL Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: JOINUNAVAIL.
- **Queue Fail Over on LEAVEUNAVAIL Destination**- Alternative destination defined in the hosting queue if the call exits the queue with QUEUESTATUS: LEAVEUNAVAIL.

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